

TECASINT 6012 natural - Direct Forming

Chemical Designation

PI (Polyimide)

Colour

brown-beige

Density

1.35 g/cm³

Production process: direct forming

Main features

- high thermal and mechanical capacity
- very high thermal and oxidative resistance
- low water absorption
- high creep resistance
- low outgassing
- good chemical resistance
- resistance against high energy radiation
- sensitive to hydrolysis in higher thermal range

Target Industries

- semiconductor technology
- electrical engineering
- electronics
- mechanical engineering
- vacuum technology
- cryogenic engineering
- automotive industry

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50 mm/min	115	MPa	DIN EN ISO 527-1	
Modulus of elasticity (tensile test)	1 mm/min	4100	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)	50 mm/min	4.2	%	DIN EN ISO 527-1	
Flexural strength	10 mm/min	175	MPa	DIN EN ISO 178	
Modulus of elasticity (flexural test)	2 mm/min	4100	MPa	DIN EN ISO 178	
Elongation at break (flexural test)	10 mm/min	5.4	%	DIN EN ISO 178	
Compression strength	10 mm/min	410	MPa	EN ISO 604	
Compression strength	10mm/min, 10% strain	165	MPa	EN ISO 604	
Compressive strain at break	10 mm/min	54	%	EN ISO 604	
Shore hardness	Shore D	88		DIN EN ISO 868	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		285	°C	-	1) (1) DMA, maximum loss factor tan d
Thermal expansion (CLTE)	50-200°C	3,2 / -	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	2) (2) Thermal expansion XY/Z axis
Thermal expansion (CLTE)	200-300°C	4,6 / -	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	3) (3) Thermal expansion XY/Z axis
Other properties	parameter	value	unit	norm	comment
Water absorption	24 h in water, 23°C	0,8	%	DIN EN ISO 62	(1) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)

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